

Claims

1. Plastic metering system in a device for producing plastic articles, comprising a metering unit (1) forming a block (2) comprising a material feed duct (10), a metering cavity (4) which may communicate with the said material feed duct (10), a material outlet orifice (5) placed on a wall of the said metering cavity (4), and a valve (3, 28) in the form of a cylindrical rod designed to slide through and close off the said material outlet orifice (5), characterized in that the metering unit (1) furthermore includes a piston (7, 30) mounted so as to slide coaxially around the valve (3, 28) so as to allow the volume of the metering cavity (4) to be varied and the material feed duct (10) to be momentarily closed off, the side wall of the piston (7, 30) having a passage (8) that can momentarily bring the material feed duct (10) into communication with the metering cavity (4).
2. System according to Claim 1, characterized in that the lower wall of the piston (7, 30) has a conical bore (13), the base of the cone being located on the side adjacent to the metering cavity (4).
3. System according to either of the preceding claims, characterized in that the metering cavity (4) includes a breaker plate (9).
4. System according to Claim 2 or 3, characterized in that the valve (3, 28) has a helical groove (12, 36).
5. System according to the preceding claim, characterized in that the valve (3, 28) has a groove of rounded cross section, composed of two successive portions, i.e. a straight part and then a helix (12, 36) of decreasing depth.
6. System according to any one of Claims 2 to 5,

characterized in that the piston (7, 30) has a helical groove (12, 39).

7. System according to the preceding claim, intended
5 for the manufacture of multilayer objects, the system comprising several material feed ducts (34, 35) and a corresponding number of passages in the piston (30), the valve (28) and the piston (30) each having a groove (36, 39).

10

8. System according to any one of the preceding claims, which furthermore includes an accumulator (15, 16) having a duct (17) placed so as to communicate with the material feed duct (10), the duct (17) of the
15 accumulator (15, 16) having an extrusion screw (19).

20

9. System according to the preceding claim, comprising means for moving the extrusion screw (19) axially in the duct (17) of the accumulator (15, 16).

25

10. Metering unit (1) forming a block (2) comprising a material feed duct (10), a metering cavity (4) which may communicate with the said material feed duct (10), a material outlet orifice (5) placed on a wall of the
25 said metering cavity (4), and a valve (3, 28) in the form of a cylindrical rod designed to slide through and close off the said material outlet orifice (5), characterized in that it furthermore includes a piston (7, 30) mounted so as to slide coaxially around the
30 valve (3, 28) so as to allow the volume of the metering cavity (4) to be varied and the material feed duct (10) to be momentarily closed off, the side wall of the piston (7, 30) having a passage (8) that can momentarily bring the material feed duct (10) into
35 communication with the metering cavity (4).

11. Accumulator (16) having a duct (17) placed so as to communicate with a material feed duct (10), the duct (17) of the accumulator (15, 16) having an extrusion

screw (19), characterized in that it includes means for moving the extrusion screw (19) axially in the duct (17) of the accumulator (15, 16).

- 5 12. Method using the system as defined in any one of Claims 1 to 9, characterized in that the following steps are carried out in succession:
- the metering cavity (4) is fed, the material outlet orifice (5) being closed;
 - 10 - the material outlet orifice (5) is opened by lowering the valve (3), which at the same time closes off the material feed duct (10);
 - the piston (7) is lowered and a dose of plastic is extracted through the material outlet orifice (5);
 - 15 - the material outlet orifice (5) is closed by raising the valve (3).